

IN THE CLAIMS

Please amend the claims as follows:

Claim 1 (Currently Amended): A memory configured to store a program, which when executed by a computer, causes the computer to perform a method of compiling for generating object code from an input source program, the object code including user-defined machine instructions defined by a user, the method comprising:

analyzing, by a syntax analyzer, whether or not an operation described in the source program conforms to grammatical rules, outputting, by the syntax analyzer, a result of the analysis as a syntax-analysis result, and associating, by the syntax analyzer, the details of the processing operations with the user-defined machine instructions and storing the associated details of the processing operations and user-defined machine instructions in an intrinsic function definition database when detecting that the combination of the instructions is a function definition of the intrinsic function which defines the details of the processing operations associated so as to be converted into the user-defined machine instruction;

generating, by a code generator, multiple machine instructions from the source program based on the syntax-analysis result of the syntax analyzer; and

replacing, by a code optimizer, the multiple machine instructions by ~~[[the]]~~ a ~~corresponding~~ user-defined machine instructions instruction stored in the intrinsic function definition database in the case where the multiple machine instructions generated from the input source program by the code generator are determined to exactly match the machine instructions generated from the details of an intrinsic function definition body of the user-defined machine instruction ~~are associated with the details of the processing operations stored in the intrinsic function definition database,~~

wherein an instruction statement for explicitly calling the intrinsic function which defines aforementioned details of the processing operations is not beforehand described in a

body of the input source program since the definition of the intrinsic function is provided independently from the input source program, and the program for compiling generates no object code from the intrinsic function.

Claim 2 (Previously Presented): The memory of claim 1, further comprising dividing, by a lexical analyzer, the operations described in the source program into tokens, wherein

the syntax analyzer analyzes whether or not the tokens conforms to grammatical rules, and analyzes whether or not the combination of the tokens is a function definition of the intrinsic function.

Claim 3 (Previously Presented): The memory of claim 1, wherein the syntax analyzer inputs the definition of the intrinsic function and the details of the processing operations of the intrinsic function from an intrinsic function information file different from the source program.

Claim 4 (Previously Presented): The memory of claim 1, wherein the definition of the intrinsic function includes information of parameter types and an identification name.

Claim 5 (Previously Presented): The memory of claim 2, wherein the definition of the intrinsic function includes information of parameter types and an identification name.

Claim 6 (Previously Presented): The memory of claim 3, wherein the definition of the intrinsic function includes information of parameter types and an identification name.

Claim 7 (Previously Presented): The memory of claim 1, wherein in the intrinsic function definition database, plural kind of details of the processing operations can be defined for one intrinsic function.

Claim 8 (Previously Presented): The memory of claim 2, wherein in the intrinsic function definition database, plural kind of details of the processing operations can be defined for one intrinsic function.

Claim 9 (Previously Presented): The memory of claim 3, wherein in the intrinsic function definition database, plural kind of details of the processing operations can be defined for one intrinsic function.

Claim 10 (Previously Presented): The memory of claim 4, wherein in the intrinsic function definition database, plural kind of details of the processing operations can be defined for one intrinsic function.

Claim 11 (Previously Presented): The memory of claim 1, wherein the definition of the intrinsic function and the details of the processing operations of the intrinsic function can be described by C language.

Claim 12 (Previously Presented): The memory of claim 1, wherein the definition of the intrinsic function and the details of the processing operations of the intrinsic function can be described by hardware description language.

Claim 13 (Currently Amended): A computer implemented method of compiling for generating object code from an input source program, the object code including user-defined machine instructions defined by a user, the computer implemented method comprising:

analyzing, by a syntax analyzer, whether or not an operation described in the source program conforms to grammatical rules, outputting, by the syntax analyzer, a result of the analysis as a syntax-analysis result, and associating, by the syntax analyzer, the details of the processing operations with the user-defined machine instructions and storing the associated details of the processing operations and user-defined machine instructions in an intrinsic function definition database when detecting that the combination of the instructions is a function definition of the intrinsic function which defines the details of the processing operations associated so as to be converted into the user-defined machine instruction;

generating, by a code generator, multiple machine instructions from the source program based on the syntax-analysis result of the syntax analyzer; and

replacing, by a code optimizer, the multiple machine instructions by a the ~~corresponding~~ user-defined machine instruction ~~instructions~~ stored in the intrinsic function definition database in the case where the multiple machine instructions generated from the input source program by the code generator are determined to exactly match the machine instructions generated from the details of an intrinsic function definition body of the user-defined machine instruction ~~associated with the details of the processing operations stored in the intrinsic function definition database,~~

wherein an instruction statement for explicitly calling the intrinsic function which defines aforementioned details of the processing operations is not beforehand described in a body of the input source program since the definition of the intrinsic function is provided independently from the input source program, and no object code is generated from the intrinsic function.

Claim 14 (Previously Presented): The computer implemented method of claim 13, further comprising

dividing, by a lexical analyzer, the operations described in the source program into tokens, wherein

in the analyzing by the syntax analyzer, whether or not the tokens conforms to grammatical rules is analyzed, and whether or not the combination of the tokens is a function definition of the intrinsic function is analyzed.

Claim 15 (Original): The computer implemented method of claim 13, wherein the definition of the intrinsic function and the details of the processing operations of the intrinsic function are inputted, by the syntax analyzer, from an intrinsic function information file different from the source program.

Claim 16 (Original): The computer implemented method of claim 13, wherein the definition of the intrinsic function including information of parameter types and an identification name are analyzed by the syntax analyzer and stored in the intrinsic function definition database.

Claim 17 (Previously Presented): The computer implemented method of claim 13, wherein in the intrinsic function definition database, plural kind of details of the processing operations can be defined for one intrinsic function.

Claim 18 (Original): The computer implemented method of claim 13, wherein the definition of the details of the processing operations of the intrinsic function described by C language is analyzed by the syntax analyzer.

Claim 19 (Original): The computer implemented method of claim 13, wherein the definition of the intrinsic function and the details of the processing operations of the intrinsic function described by hardware description language is analyzed by the syntax analyzer.

Claim 20 (Currently Amended): A computer implemented program development system for developing an application program for a processor which can execute user-defined machine instructions defined by a user, the computer implemented program development system comprising:

a compile apparatus for generating object code from the application program comprising

a lexical analyzer configured to divide an operation described in a source code of the application program into tokens,

a syntax analyzer configured to analyze whether or not the tokens conform to grammatical rules, output a result of the analysis as an syntax-analysis result, and associate the details of the processing operations with the user-defined machine instructions and store the associated details of the processing operations and user-defined machine instructions in an intrinsic function definition database when detecting that the combination of the instructions is a function definition of the intrinsic function which defines the details of the processing operations associated so as to be converted into the user-defined machine instruction,

a code generator configured to generate multiple machine instructions from the application program based on the syntax-analysis result of the syntax analyzer, and

a code optimizer configured to optimize the multiple machine instructions by ~~a~~ the corresponding user-defined machine instructions instruction stored in the intrinsic function definition database in the case where the multiple machine instructions generated from the input source program by the code generator are determined to exactly match the machine instructions generated from the details of an intrinsic function definition body of the user-defined machine instruction ~~associated with the details of the processing operations stored in the intrinsic function definition database;~~ and

a simulator apparatus configured to simulate the application program including the machine instruction output from the compile apparatus,

wherein an instruction statement for explicitly calling the intrinsic function which defines aforementioned details of the processing operations is not beforehand described in a body of the input source program since the definition of the intrinsic function is provided independently from the input source program, and the compile apparatus generates no object code from the intrinsic function.